

Catherine Gomez Assistant Professor (Cnam)

Current position :

Laboratory of Genomic, Bioinformatic and Molecular Chemistry (GBCM)
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Position and Education

- 2013-present Assistant Professor (Permanent), Laboratory GBCM, Molecular Chemistry Group, Conservatory National of Arts and Crafts, Paris, France
- 2012-2013: Post-Doctoral researcher, IRCOF Institut de Recherche en Chimie Organique Fine, Rouen, France
Topic: "Synthesis of organophosphorus and new reactivators of AChE"
- 2011-2012: Post-Doctoral researcher, ICSN Institut de Chimie des Substances Naturelles, Gif-sur-Yvette, France
Topic: "Synthesis of cyclic molecules by phosphines-catalyzed asymmetric reactions"
- 2010-2011: Post-Doctoral researcher, ITODYS Laboratoire de Chimie et Pharmacochimie, University of Paris-Diderot, France
Topic: "Synthesis of new quinolones as antibacterial and/or antiparasitic"
- 2008-2010: Post-Doctoral researcher, Max Planck Institut, Germany
Topic: "Activation of small molecules by Carbon(0)/Borane Frustrated Lewis Pairs"
- 2004-2007: Ph.D degree in Organic Chemistry, ICOA Institut de Chimie Organique et Analytique University of Orleans, France
Topic: "Development of new mixed ECA/ECE inhibitors for hypertension treatment"
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Main research interests

- 1/ Nanotechnologies 2/Continuous Flow Chemistry 3/ Synthesis of therapeutic compounds
4/ Organic Chemistry 5/ Medicinal Chemistry

Responsibilities, Organization and Collaborations

- Supervision and co-supervision: 1 PhD, 5 Undergraduate students, 2 Cnam engineers, 8 Bachelors
 - Other supervision: engineering assistant (several months/year)
 - Teaching at Cnam Paris: 200h/year - Responsible of Practical Courses
 - National and International collaborations: University of Paris Saclay (LCP), University of Bordeaux (CBMM), University of Poitiers (CHU), University of Paris Diderot (AP-HP), University of Mons (RMN)
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Publications and Lectures

14 articles (*h*-index = 9) with lecture committee - **2 book chapters** - **1 patent**
6 Oral Communications - **15 Poster Communications**

Relevant publications in the last 7 years

1/Patent

"Bismuth Metallic (0) Nanoparticles, Process of Manufacturing and Uses Thereof" Gomez, C.; Port, M.; Hallot, G. *EP 18 305 851.0* **2018**.

2/Articles

1. "Metallic Bismuth Nanoparticles : Towards a Robust, Productive and Ultrasound Assisted Synthesis from Batch to Flow-Continuous Chemistry" Gomez, C.*; Hallot, G. ; Pastor, A. ; Laurent, S. ; Brun, E. ; Sicard-Roselli, C. ; Port, P.* *Ultrason. Sonochem.* **2019**, *56*, 167-173. doi.10.1016/j.ultsonch.2019.04.012. (IF 7.3)

2. "Inhibition of p53-Murine Double Minute (MDM2) Interactions with 3,3'-Spirocyclopentene Oxindole Derivatives" Gicquel, M ; Gomez, C. ; Garcia Alvarez, M.C. ; Pamard, O. ; Guérineau, V. ; Jacquet, E. ; Bignon, J. ; Voituriez, A. ; Marinetti, A. *J. Med. Chem.* **2018**, *61*, 9386-9392. doi.org/10.1021/acs.jmedchem.8b01137. (IF 6.0)
3. "Potent 3-Hydroxy-2-Pyridine Aldoxime Reactivators of Organophosphate-Inhibited Cholinesterases with Predicted Blood Brain Barrier Penetration" Zorbaz, T. ; Braiki, A. ; Marakovic, N. ; Renou, J. ; De la Mora, E. ; Macek Hrvat, N. ; Katalinic, M. ; Silman, I. ; Sussman, J.L. ; Mercey, G. ; Gomez, C. ; Mougeot, R. ; Perez, B. ; Baati, R. ; Nachon, F. ; Weik, M. ; Jean, L. ; Kovarik, Z. ; Renard, P.Y. *Chem. Eur. J.* **2018**, *24*, 9675-9691. doi.org/10.1002/chem.201801394 (IF 5.1)
4. "Perindopril phosphonate analogues as a new class of angiotensin converting enzyme1 inhibitors" Gomez, C. ; Berteina-Raboin, S. ; De Nanteuil, G. ; Guillaumet, G. *Bioorg. Med. Chem.* **2013**, *21*, 7216-7221. doi.org/10.1016/j.bmc.2013.08.032 (IF 2.8)
5. "Synthesis of 3,3'-spirocyclic Oxindoles via Phosphine Catalyzed [4+2] Cyclizations" Gicquel, M. ; Gomez, C. ; Carry, J.C. ; Schio, L. ; Retailleau, P. ; Voituriez, A. ; Marinetti, A. *Org. Lett.* **2013**, *15*, 4002-4005. doi.org/10.1021/ol401798w (IF 6.5)
6. "Phosphine-Catalyzed Synthesis of 3,3-Spirocyclopenteneoxindoles from γ -Substituted Allenolates: Systematic Studies and Targeted Applications" Gomez, C. ; Gicquel, M. ; Carry, J.C. ; Schio, L. ; Retailleau, P. ; Voituriez, A. ; Marinetti, A. *J. Org. Chem.* **2013**, *78*, 1488-1496. doi.org/ 10.1021/jo302460d (IF 4.8)
7. "Synthesis of gatifloxacin derivatives and their biological activities against Mycobacterium leprae and Mycobacterium tuberculosis" Gomez, C. ; Ponien, P. ; Serradji, N. ; Lamouri, A. ; Pantel, A. ; Capton, E. ; Jarlier, V. ; Anquetin, G. ; Aubry, A. *Bioorg. Med. Chem.* **2013**, *21*, 948-956. doi.org/ 10.1016/j.bmc.2012.12.011 (IF 2.8)
8. "Phosphine Organocatalysis in the Synthesis of Natural Products and Bioactive Compounds" Gomez, C. ; Betzer, J.F. ; Voituriez, A.* ; Marinetti, A.* *Chem. Cat. Chem.* **2013**, *5*, 1055-1065. doi.org/ 10.1002/cctc.201200442 (IF 4.5)

3/Book chapters

1. "Bismuth metallic nanoparticles" in "Inorganic frameworks as smart nanomedicines" Gomez C., Hallot G. , Port M., Pharmaceutical Nanotechnology Series, Grumezescu, A.M. Elsevier, **2018**, 1-699.
2. "Phosphoryl Compounds" in "*Best Synthetic Methods : Organophosphorus (V) Chemistry*" Gomez, C. ; Renard, P.Y. - Timperley, C. Ed. Elsevier, Amsterdam. **2015**.
 Chapter 1 : *S,O,O*-trialkyl(aryl)thiophosphonates (RO)₂P(O)SR'
 Chapter 2 : tetralkyl(aryl)pyrophosphate (RO)₂P(O)XP(O)(OR)₂

Oral Communications and Invited Lecture

1. "Synthesis, Characterization and Functionalization of Metallic Bismuth Nanoparticles" Gomez, C. ICMUB, Université de Bourgogne, Dijon, France, 09 décembre **2019**. *Invited lecture*
2. "Metallic Bismuth Nanoparticles : From Batch to Continuous Flow Process" Gomez, C. GDR SynthFlux, Rouen, France, 21-22 mai **2019**.
3. "Metallic Bismuth Nanoparticles : synthesis *via* a green and safe process" Gomez, C. SCF Chimie Durable, Lyon, France, 04 avril **2019**.
4. "Metallic Bismuth Nanoparticles : a reproducible, robust and repeatable synthesis *via* a green and safe process" Gomez, C. ; Port, M. Nanotech France, La Défense, France, 27-29 juin **2018**.